Title: METHOD AND STRUCTURE FOR IDENTIFYING LEAD-FREE SOLDER

Assignee: Intel Corporation

## IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method comprising:

placing a predetermined solder pattern  $\underline{in}$  a shape of a symbol onto a pad provided on a substrate; and

heating said predetermined solder pattern[[,]] and turning the solder pattern to a liquid state; and

cooling the predetermined solder pattern, turning the heated and cooled predetermined solder pattern to a solid state;

wherein a visual appearance of said heated <u>and cooled</u> predetermined solder pattern <u>is</u>
being indicative of whether <u>a solder paste used to form the predetermined solder pattern is lead-free by maintaining a substantially same pattern as the symbol of said predetermined solder
pattern after heating and cooling the predetermined solder pattern when the solder paste used to
form the predetermined solder pattern is lead-free said-solder is lead-free.</u>

- 2. (Original) The method of claim 1, wherein said substrate comprises a printed circuit board.
- (Currently Amended) The method of claim 1, wherein placing said predetermined solder
  pattern comprises passing the solder paste used to form the shape of the symbol through at least
  one stencil aperture and onto said pad.
- 4. (Currently Amended) The method of claim 1, wherein said predetermined solder pattern comprises at least one symbol <u>including the letters "LF" representing lead-free solder</u>.
- 5. (Canceled)
- (Currently Amended) The method of claim 1, further comprising examining said heated and cooled predetermined solder pattern to determine if said solder is lead-free.

7. (Currently Amended) The method of claim 6, wherein examining said heated <u>and cooled</u> predetermined solder pattern comprises visually identifying whether said predetermined solder pattern after heating <u>and cooling</u> is in substantially a same pattern as said predetermined solder pattern before heating <u>and cooling</u>.

8. (Canceled)

9. (Currently Amended) A method comprising:

providing a pad on a substrate;

placing solder on said pad; and

heating said solder so as to create reflow[[,]]; and

cooling said solder after the reflow is completed;

wherein a visual appearance of said heated and cooled solder is being indicative of whether said solder is lead-free based on the amount of reflow of said solder on said pad.

10. (Original) The method of claim 9, wherein said substrate comprises a printed circuit board.

11. (Original) The method of claim 9, wherein placing said solder on said pad comprises passing said solder through at least one stencil aperture and onto said pad.

12. (Original) The method of claim 11, wherein said solder is placed onto said pad in a predetermined pattern.

13. (Original) The method of claim 12, wherein said predetermined pattern comprises at least one symbol.

14. (Currently Amended) The method of claim 9, further comprising identifying whether said solder is lead-free based on an amount of reflow of said heated and cooled solder.

- 15. (Original) The method of claim 14, wherein identifying whether said solder is lead-free comprises visually identifying whether said solder after reflow is in substantially the same predetermined pattern as before reflow.
- 16. (Original) The method of claim 14, wherein identifying said solder as lead-free comprises determining whether an amount of reflow is greater than a predetermined amount.
- 17. (Original) The method of claim 16, wherein said determining is based on a distance of reflow along said pad.
- 18. (Original) The method of claim 9, wherein placing said solder on said pad comprises placing solder at one end of an indicator strip.
- 19. (Currently Amended) A method of identifying whether a printed circuit board is lead-free, said method comprising:

receiving said printed circuit board having a heated solder pattern formed thereon; and identifying whether solder on said printed circuit board is lead-free based on whether said heated and cooled solder pattern is substantially similar to a predetermined solder pattern.

- 20. (Original) The method of claim 19, wherein said predetermined solder pattern comprises at least one of a symbol and a character.
- 21. (Currently Amended) The method of claim 19, wherein said solder on said printed circuit board is determined to be lead-free if said heated and cooled solder pattern is substantially similar to said predetermined solder pattern.
- 22. (Currently Amended) The method of claim 19, wherein said solder on said printed circuit board is determined to not be lead-free if said heated and cooled solder pattern substantially differs from said predetermined solder pattern.

23. (Currently Amended) A method of identifying whether a printed circuit board is lead-free, said method comprising:

receiving said printed circuit board having a heated and then cooled solder pattern formed on a pad thereon; and

identifying whether solder on said printed circuit board is lead-free based on a distance that said solder pattern reflows by comparing the distance that said solder pattern reflows with at least one visual indicator provided at a certain location along the pad on said printed circuit board.

- 24. (Currently Amended) The method of claim 23, wherein said identifying comprising comparing a distance that said solder reflows with at least one indicator line provided on said printed circuit board.
- 25. (Currently Amended) The method of claim 24, wherein said solder on said printed circuit board is determined to be lead-free if said solder has not reflowed further than said at least one visual indicator including a line.
- 26. (Currently Amended) The method of claim 24, wherein said solder on said printed circuit board is determined to not be lead-free if said solder has reflowed further than said at least one visual indicator.

27-30. (Canceled)

(Currently Amended) The method of claim 6, wherein examining said heated and cooled 31. predetermined solder pattern comprises determining that said solder is lead-free if said predetermined solder pattern after heating is in substantially a same pattern as said predetermined solder pattern before heating.

Serial Number: 09/964,746

Filing Date: September 28, 2001

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- 32. (Currently Amended) The method of claim 12, further comprising determining that said solder is lead-free if said predetermined solder pattern after heating and cooling is in substantially a same pattern as said predetermined solder pattern before heating.
- (Currently Amended) A method comprising:

placing a solder paste in a predetermined solder pattern onto a pad on a substrate having a first visual indicator along side the pad including the words "LEAD-FREE BOARD" and a second visual indicator along side the pad including the words "LEAD BOARD" and a third visual indicator along side the pad and between the first visual indicator and the second visual indicator;

heating and cooling said predetermined solder pattern; and

determining that said solder is lead-free if said predetermined solder pattern after heating and cooling reflows a distance along the pad that does not extend to an area adjacent to the second visual indicator is in substantially a same pattern as said predetermined solder pattern before heating.

- (Currently Amended) The method of claim 33, wherein said predetermined solder pattern comprises a rectangle at least one symbol.
- 35. (Previously Presented) The method of claim 33, wherein said substrate comprises a printed circuit board.